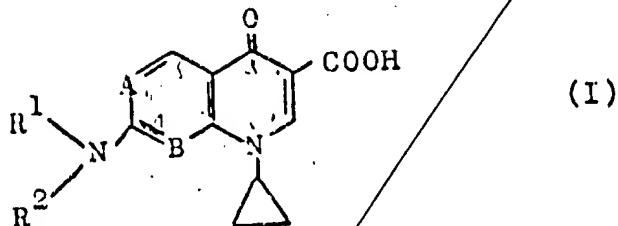


WHAT IS CLAIMED IS:

1. A compound which is a 7-amino-1-cyclopropyl-4-oxo-1,4-dihydroquinoline- and -naphthyridine-3-carboxylic acid of the formula



or a pharmaceutically acceptable acid addition salt or an alkali or alkaline earth metal salt thereof,

in which

A represents a nitrogen atom or CR³,

wherein

R³ denotes a hydrogen, a nitro group or a halogen atom, or a carboxamide or carboxyl group, and

B represents a nitrogen atom or C-H, and A and B cannot simultaneously be nitrogen atoms, and

R¹ and R² are identical or different and represent a hydrogen atom or a straight-chain or branched alkyl, alkenyl or alkynyl radical which has up to

12 carbon atoms and is optionally substituted by radical(s) selected from hydroxyl, alkoxy, alkyl-mercapto or dialkylamino with 1 to 3 carbon atoms in each alkyl radical, alkoxycarbonyl with 1

to 4 carbon atoms in the alcohol part, mono- or bi-cyclic carbocyclic aryl and mono- or bi-cyclic N-, O- or S-hetaryl, or furthermore represent a cycloalkyl

radical with 3 to 6 carbon atoms, or, together with the nitrogen atom which they substitute and, if appropriate, a further hetero-atom form a 3-

membered to 7-membered ring which can be mono-substituted or polysubstituted by radical(s) selected from alkyl or alkenyl with 1 to 6 carbon atoms,

Proposed

hydroxyl, alkoxy or alkylmercapto with 1 to 3 carbon atoms, alkoxycarbonyl with 1 to 4 carbon atoms in the alcohol part, and mono- or bi-cyclic carbocyclic aryl, and which can furthermore possess a double bond.

2. A compound according to claim 1, in which A represent CR^3 and R^3 represents a fluorine or chlorine atom.

Proposed
N
P

3. A compound according to claim 1 or 2, in which R^1 and R^2 together with the nitrogen atom which they substituted and oxygen or sulphur or NR^4 as a further heteroatom form a 3-membered or 7-membered ring which can be monosubstituted or polysubstituted by radical(s) selected from alkyl or alkenyl with up to 6 carbon atoms, hydroxyl, alkoxy or alkylmercapto with 1 to 3 carbon atoms, alkoxycarbonyl with 1 to 4 carbon atoms in the alcohol part, and mono- or bi-cyclic carbocyclic aryl, and which can furthermore possess a double bond, and in which

R^4 represents a hydrogen atom, or a branched or straight-chain alkyl, alkenyl or alkinyl group which has up to 6 carbon atoms and is optionally substituted by radical(s) selected from hydroxyl, alkoxy, alkylmercapto or dialkylamino with 1 to 3 carbon atoms per alkyl radical, and alkoxycarbonyl with 1 to 4 carbon atoms in the alcohol part, or represents an aralkyl group which is optionally substituted in the mono- or bi-cyclic carbocyclic aryl radical and has up to 4 carbon atoms in the aliphatic part, or an optionally substituted phenyl or naphthyl group or a heterocyclic radical, or

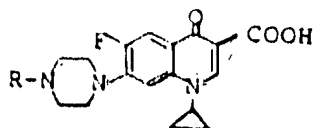
R^4 denotes an alkoxycarbonyl group which is optionally substituted by a mono- or bi-cyclic carbocyclic aryl radical and has 1 to 4 carbon atoms in the alcohol part, an alkanoyl radical with 1 to 6 carbon atoms, an

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aroyl radical, an optionally substituted alkyl- or aryl-(thio)carbamoyl radical, an alkyl- or aryl-sulphonyl radical or an optionally substituted aminosulphonyl radical.

4. A compound according to claim 3, in which R^4 represents a radical of pyridine, pyrimidine, thiazole or benzothiazole.

5. A 1-cyclopropyl-6-fluoro-1,4-dihydro-4-oxo-7-piperazino-quinoline-3-carboxylic acid of the formula



P2 or salts and/or hydrates thereof,

P1 in which

R denotes hydrogen, methyl, ethyl or β -hydroxy-ethyl.

6. A compound according to claim 1 which is 7-(4-methyl-piperazino)-1-cyclopropyl-4-oxo-1,4-dihydro-naphthyridine-3-carboxylic acid.

7. A compound according to claim 1 which is 7-piperazino-1-cyclopropyl-4-oxo-1,4-dihydro-naphthyridine-3-carboxylic acid.

8. A compound according to claim 1 which is 7-pyrrolidino-1-cyclopropyl-4-oxo-1,4-dihydro-naphthyridine-3-carboxylic acid.

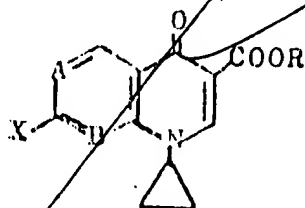
9. A compound according to claim 1 which is 7-(4-formylpiperazino)-1-cyclopropyl-4-oxo-1,4-dihydro-naphthyridine-3-carboxylic acid.

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10. A compound according to claim 1 which is 7-(4-hydroxyethylpiperazino)-1-cyclopropyl-4-oxo-1,4-dihydro-naphthyridine-3-carboxylic acid.
11. A compound according to claim 1 which is 7-piperazino-1-cyclopropyl-4-oxo-1,4-dihydro-6-fluoro-quinoline-3-carboxylic acid.
12. A compound of claim 5 which is 1-cyclopropyl-6-fluoro-1,4-dihydro-4-oxo-7-piperazino-quinoline-3-carboxylic acid.
13. A compound of claim 5 which is 1-cyclopropyl-6-fluoro-1,4-dihydro-4-oxo-7-(4-methylpiperazino)-quinoline-3-carboxylic acid.
14. A compound of claim 5 which is 1-cyclopropyl-6-fluoro-1,4-dihydro-4-oxo-7-(4-ethylpiperazino)-quinoline-3-carboxylic acid.
15. A compound of claim 5 which is 1-cyclopropyl-6-fluoro-1,4-dihydro-4-oxo-7-(4-β-hydroxyethyl-piperazino)-quinoline-3-carboxylic acid.

16. A process for the production of a compound according to claim 1 which comprises reacting

(a) a naphthyridone-3-carboxylic acid of the formula



(II)

in which

R denotes a hydrogen atom

A and B have the same meanings as in Claim 1 and

X represents a halogen atom or an alkylsulphonyl
group with 1 to 4 carbon atoms.

with an amine of the formula



(III)

in which

R¹ and R² have the same meanings as in claim 1 or

(b) reacting a 7-halogeno-naphthyridone-3-carboxylic acid
ester of the formula (II) with an amine of the formula
(III), as defined above, and hydrolyzing the resulting
7-amino-naphthyridine-3-carboxylic acid ester under
alkaline conditions.

17. A process according to claim 16 (b), in which
the reaction is carried out in the presence of an
acid binding agent.

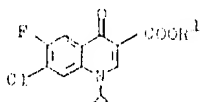
18. A process according to claim 17, in which the acid
binding agent is triethylamine or pyridine.

19. A process according to claims 16 a), 16. b),
17 or 18 in which the reaction is carried out in ethanol,
dioxane, toluene, dimethylformamide or dimethylsulphoxide
as diluent.

20. A process according to claim 19 in which the
reaction is carried out at a temperature between 20° and
180°C.

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21. A process for the production of a compound according to claim 5, which comprises reacting
(a) 7-chloro-1-cyclopropyl-6-fluoro-1,4-dihydro-4-oxo-quinoline-3-carboxylic acid of the formula



II

in which

R^1 denotes a hydrogen atom,

with piperazine or a piperazine derivative of the formula



III

in which

R has the same meaning as in claim 1, or
(b) a compound of formula (II), as given in reaction variant (a), in which R^1 denotes an alkyl group, with a compound of formula (III), as defined in reaction variant (a), and the 7-piperazo-quinolone-3-carboxylic acid ester obtained is hydrolysed under alkaline conditions to give a compound of formula (I), and the compound of formula (I), obtained by reaction variant (a) or (b) is converted, if desired, into a salt or hydrate thereof.

22. A process according to claim 20 (a), characterized in that the reaction is carried out in the presence of a diluent.

23. A process according to claim 21 (a) or 22, characterized in that the reaction is carried out at a temperature between 20 and 200°C.

~~24.~~ ¹⁶ A process according to claim ~~21~~ ¹⁶ (b), characterized in that the reaction is carried out in the presence of an acid-binding agent.

~~25.~~ ¹⁶ A pharmaceutical composition containing as an active ingredient an antibacterially effective amount of a compound according to claim 1 in admixture with an inert pharmaceutical carrier.

~~26.~~ ¹⁷ A pharmaceutical composition according to claim ~~25~~ ¹⁶ in the form of a sterile or physiologically isotonic aqueous solution.

~~27.~~ ¹⁸ A composition according to claim ~~25~~ ¹⁶ or ~~26~~ ¹⁷ containing from 0.5 to 95% by weight of the said active ingredient.

~~28.~~ ¹⁹ A medicament in dosage unit form comprising an antibacterially effective amount of a compound according to claim 1 together with an inert pharmaceutical carrier.

~~29.~~ ¹⁸ A medicament of claim ~~27~~ ¹⁸ in the form of tablets, pills, dragees, capsules, ampoules, or suppositories.

~~30.~~ ²¹ A method of combating bacterial illnesses in warm-blooded animals which comprises administering to the animals an antibacterially effective amount of an active compound according to claim 1 either alone or in admixture with a diluent or in the form of a medicament.

~~31.~~ ²² An animal feed, food concentrate or drinking water comprising an active compound according to claim 1.

[Handwritten signature]

32. 1-cyclopropyl-6-fluoro-1,4-dihydro-4-oxo-7-chloro-quinoline-3-carboxylic acid.

33. Ethyl 2,4-dichloro-5-fluorobenzoyl-acetate.

34. Ethyl 2-(2,4-dichloro-5-fluorobenzoyl)-3-ethoxy-acrylate.